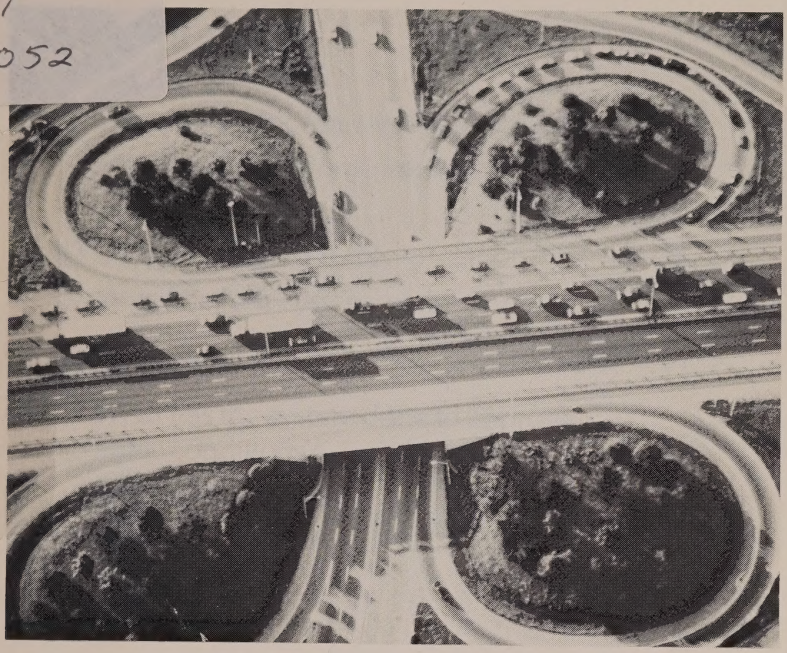
QEW - MISSISSAUGA

FREEWAY TRAFFIC MANAGEMENT SYSTEM



Ontario
Ministry of Transportation
Ministère des Transports

Cover shot / QEW / Freeway

CONTENTS

MTO emergency patrol vehicles can reach broken down motorists or truckers more quickly with the help of FTMS operators.

Notified by FTMS operators, police or other emergency vehicles can be dispatched to accident scenes quickly.

INTRODUCTION TO FTMS

A Freeway Traffic Management System is a mix of electronic components and operating procedures designed to improve safety and traffic flow by making better use of a freeway's capacity.

A system usually includes computer-based detection, closed circuit TV, ramp control signals, emergency vehicle dispatch, advisory information on changeable message signs, and media information.

A short history

The first FTMS system was installed on the QEW in Mississauga in 1975 to smooth the flow of traffic between Hurontario Street and Erin Mills Parkway where large volumes of traffic entering the freeway during the morning rush hour created sudden stop-and-go conditions.

The system helped to detect traffic congestion and collisions -- as a result traffic flows were improved and traffic delays reduced.

Loop detectors buried under the roadway give continuous traffic volume readings which are fed into the FTMS control centre computer.

Traffic signals on ramps are sometimes used to control the flow of traffic onto the QEW. As a result freeway traffic moves more smoothly.

System operation

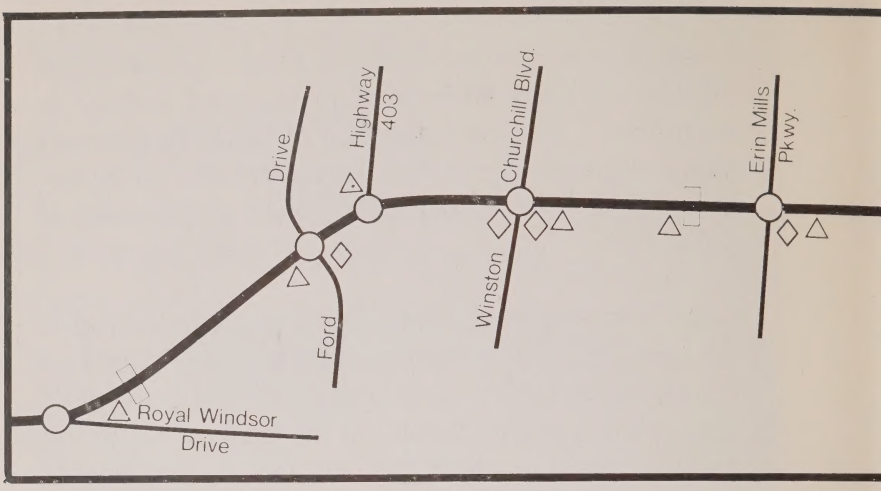
Traffic flow is monitored continuously by the use of vehicle detectors embedded in the road surface in each lane. They are installed at frequent intervals along the freeway, so that the system can count vehicles as well as calculate the speed and density of traffic flow.

Vehicle access to the freeway is regulated through the use of ramp metering signals. Ramp meters release vehicles one or two at-a-time, at a specified rate, relative to the density of the traffic flow on the freeway. Queue detectors on the ramps ensure against severe backups.

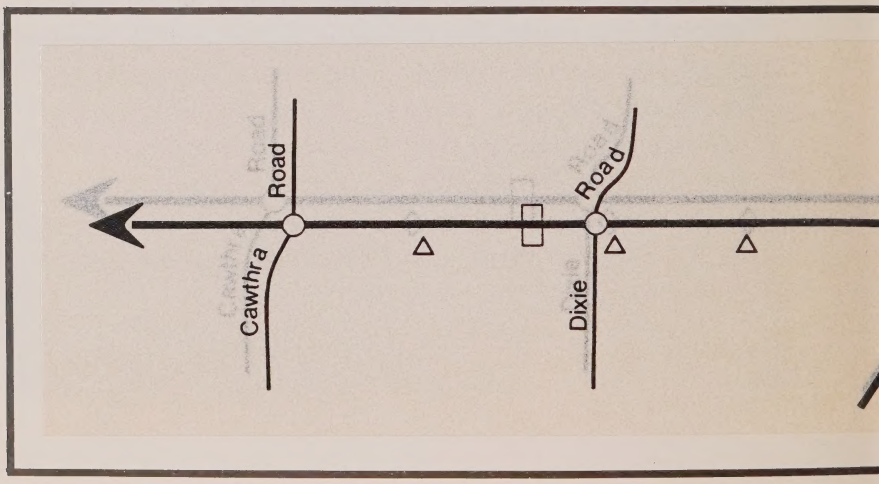
The system operates Monday to Friday, 6:00 a.m. to 3:00 p.m. Ramp metering takes place for about two hours each day in the eastbound lanes during peak morning rush hours.

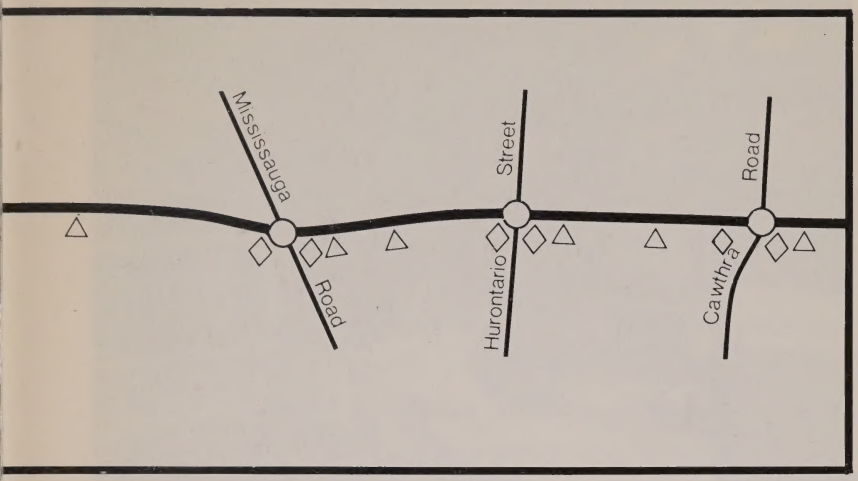
When an on-highway problem occurs which slows or obstructs traffic, the operator at the control centre is alerted by the system. The operator checks the problem through closed circuit TV; dispatches emergency help; transmits advisory information to the changeable message signs and makes traffic reports available to the media. A direct telephone line to the Ontario Provincial Police ensures immediate police response to accidents.

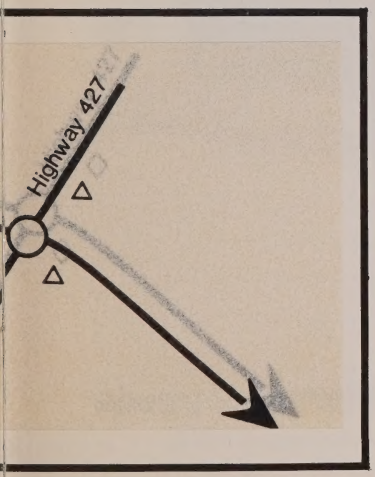
Existing QEW F.T.M. System



Proposed FTMS Extension to Hwy. 427







LEGEND:

△ Remote TV Camera

◇ Ramp Metering

Changeable Message Sign

The FTMS control centre is the focal point of all traffic monitoring activities.

Changeable message signs are an important component of FTMS and can be programmed with messages to meet specific situations.

Benefits

What has the system done to improve traffic conditions?

The rapid detection of problems and prompt response of police and emergency services reduce traffic delays.

Controlled entry of vehicles onto the freeway reduces the "shock" effect to the traffic stream and improves the overall speed, flow, and safety of vehicles, drivers and passengers.

The benefits resulting from the QEW-Mississauga FTMS system include:

- 22% reduction in collisions,
- 45% increase in average speed,
- 21% reduction in overall delay.

Continuous collection of traffic data by the system also assists in monitoring increases in traffic volumes and detecting trends in freeway usage.

Everyone benefits

- daily commuters travelling during morning rush hours have more uniform traffic flow conditions, reliable advisory information, and increased roadway safety.
- all motorists, through improved safety and reduced fuel consumption.
- commercial traffic through reduced travel times and uniform traffic flow.
- adjacent communities, through reduced air pollution / a more effective utilization of available road capacity.

Remote controlled video-cameras help FTMS operators detect, locate and respond to vehicle breakdowns or accidents on the QEW.

Future Plans

Plans are now underway to expand the system easterly to Hwy. 427 with the addition of six cameras, 21 loop detectors, and one changeable message sign.

The existing control centre located in a construction trailer will be relocated to a nearby building and will eventually be incorporated into a new control centre at Downsview.

Further expansion of the system from Hwy. 427 to the Gardiner Expressway is now in the design stage and will eventually provide continuous coverage into the downtown area by interfacing with a proposed system on the Gardiner Expressway.

Fact sheet

System Limits

Royal Windsor Drive to Cawthra Road

Length

14 km

Number of Cameras

12

Number of Detectors

178

Number of Ramp Signals

10

Number of Changeable Message Signs

2

Communication Type

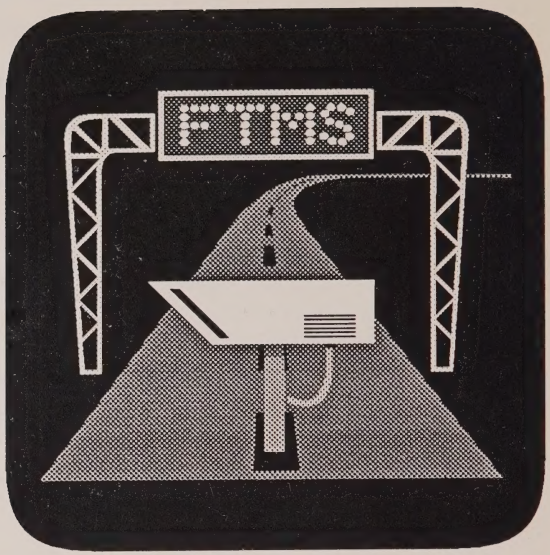
Coaxial Cable (Simultaneous Video, Voice and Data Transmission)

Cost

What did the system cost to install?

It is estimated that the capital cost invested in the current system is approximately two million dollars.

Annual operating and maintenance costs are estimated to be $420,000 per year.



For more information about FTMS contact:

Freeway Traffic Management Section
Ministry of Transportation
1201 Wilson Avenue
2nd Floor, West Building
Downsview, Ontario M3M 1J8
Telephone: (416) 235-3534